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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,294	02/12/2002	Henrik Jensen	BP 2107	4917

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EXAMINER	
KIM, KEVIN	

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 04/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/074,294	JENSEN ET AL.	
	Examiner	Art Unit	
	Kevin Y. Kim	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,10-14,19-22,27* is/are rejected.

7)☒ Claim(s) *6-9,15-18 and 23-26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 13, 2006 has been entered.

Response to Arguments

2. Applicant's arguments filed on April 13, 2006 have been fully considered but they are not persuasive.

Applicant argue that the Torsti patent fails to teach "updating the determined sampling point based on a difference between the system symbol rate and the transmit symbol rate" because it calculate a difference between samples S(-1) and S(1). The Torsti patent endeavors to make the symbol clock of the receiver follow as accurately as possible the symbol clock of the transmitter. See col. 1, lines 34-45. Thus, the difference between a difference samples S(-1) and S(1) and a target is caused by and thus is actually a measure of a difference between the system symbol rate and the transmit symbol rate. Since the claims used the phrase "based on," one can not say that the Torsti patent's updating the determined sampling point is not based on a difference between the system symbol rate and the transmit symbol rate .

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 4, 5, 10,11, 13, 14, 19, 20, 21, 22 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu (5,991,346 previously cited) in view of Torsti (US 5,724,397 cited previously).

Claims 1, 11 and 20.

Lu discloses a method for determining an optimum sampling time for data recovery, comprising the steps of;

receiving an encoded signal, i.e., NRZ data signal, which has positive and negative values with respect to a reference (see Fig.3)

determining a reference crossing of the encoded signal, i.e., a zero crossing, see col.5, lines 1-7,

determining a sampling phase based on the zero crossing and the symbol rate, see col.5, lines 7-11, and

sampling the encoded signal at the determined sampling phase.

But Lu fails to teach "updating the determined sampling phase based on a difference between the system symbol rate and the transmit symbol rate." Torsti teaches adjusting the sampling phase based on a difference between the system symbol rate and the transmit symbol rate. See col.1, 28-43 describing controlling the phase of a symbol clock in order to compensate the transmitter jitter (a difference between the transmitter symbol rate and the receiver symbol clock), and col. 4, lines 4-19. Thus, it would have been obvious to one skilled

in the art at the time the invention was made to further adjust the determined sampling phase of Lu based on a difference between the system symbol rate and the transmit symbol rate, as taught by Torsti, for the purpose of synchronizing the transmitter and the receiver even in an communication environment causing a transmitter jitter.

Additionally with respect to Claim 11, Lu discloses all the subject matter claimed as explained above. Further Lu teaches a programmed DSP to carry out the process, i.e., using a processor and instructions stored in a memory. See col.3, lines 31-39.

Additionally with respect to 20, Lu discloses all the subject matter claimed as explained above but does not describe radio receiver components including an LNA, IF downconverter, bandpass filter, A/D and a demodulator. However, there are all well known and commonly used radio receiver components and thus would have been obviously used by Lu when its signal is transmitter over the radio communication to receive GSM communication signal. See col.1, lines 23-24.

Claims 4, 13 and 21.

It is well established that the NRZ encoded signal, such as used by Lu, contains a clock signal and thus the symbol rate is determined based on the encoded data.

Claims 5, 14 and 22.

An initial sampling phase is set and utilized before a midpoint is found between zero crossings.

Claims 10, 19 and 27.

Lu teaches that the symbol time includes a plurality of oversampling times. See col. 5, lines 27-39.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Torsti, as applied to claim 1 above, and further in view of Serfaty et al (US 4,651,026 previously cited).

Lu in view of Torsti discloses all the subject matter claimed except for the encoded signal being a multi-leveled one having "third data values" and "fourth data values." Serfaty et al disclose a need for achieving optimum sampling time in a multi-level signal. See col.3, line 62 – col.4, line 2. Thus, it would have been obvious to one skilled in the art at the time the invention was made to recover a multi-level signal such as disclosed by Serfaty by using the sampling time determination method of Lu for the purpose of providing an optimum sampling point to the received multi-leveled signal.

6. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu in view of Torsti, as applied to claim 1 above, and further in view of Roberts et al (US 4,575,683 previously cited).

Lu in view of Torsti discloses all the subject matter claimed except for determining and removing a DC offset in the received encoded signal. Roberts et al teach a method of determining and removing a DC offset in the received encoded signal. See Fig.1, 2A, 2B, 3A and 3B. Thus, it would have been obvious to one skilled in the art at the time the invention was made to determine and remove a DC offset in the received signal of Lu prior to sampling for the purpose of providing dc offset compensated signal for more accurate decoding the received signal as taught by Roberts et al.

Allowable Subject Matter

7. Claims 6-9,15-18,23-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 26, 2006

/Kevin Kim/

KEVIN KIM
PATENT EXAMINER